

# National Cancer Prevention Policy

2007–09



## Preventable risk factors

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### Overweight & obesity



# Overweight and obesity

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*Obesity is associated with increased risk of cancer of the colon, breast (post-menopause), endometrium, kidney, oesophagus and gall bladder. Levels of overweight and obesity in Australia continue to be a major health concern. Of particular concern is the latest estimate that one in four children is overweight or obese.*

## Introduction

Rising rates of overweight and obesity have been described as reaching epidemic proportions in the developed nations and causing concern in developing nations. Australia is no exception. Over the last 30 years, rates of overweight and obesity among adults and, even more worrying, among children, have risen and the rise is accelerating.

Overweight and obesity are a major public health issue: they are an established cause of morbidity and mortality and are one of the largest risk factors for chronic diseases in Western countries, particularly increasing the risk of diabetes, cardiovascular disease and some cancers (WHO & FAO 2003).

There are several ways to measure disease risk associated with overweight and obesity, including body mass index (BMI) and waist circumference.

BMI is the most commonly used and internationally accepted measure to assess overweight and obesity (NHMRC 2003a). This is calculated by dividing a person's weight (in kilograms) by their height (in metres squared). According to the World Health Organization's definitions, **adults**:

- with a BMI under 18.5 kg/m<sup>2</sup> are classified as *underweight*
- with a BMI of >18.5 to <25 kg/m<sup>2</sup> are classified as *healthy weight*
- with a BMI of >25 to <30 kg/m<sup>2</sup> are classified as *overweight*
- with a BMI of >30 kg/m<sup>2</sup> or higher are classified as *obese* (WHO & FAO 2003).

As BMI increases from a healthy weight to overweight or obesity, the risk of ill health rises. Individuals who are obese have a 50% to 100% increased chance of premature death from all causes compared to individuals with a BMI in the healthy range (WHO 2000).

It should be noted, however, that these classifications are not suitable for children and adolescents due to age-related growth patterns, and BMI-for-age percentile charts, developed by the Centers for Disease Control and Prevention, should be used to assess overweight and obesity in children. The National Health and Medical Research Council defines the following cut-offs for **children and adolescents**:

- BMI above the 85th percentile is indicative of overweight
- BMI above the 95th percentile is indicative of obesity (NHMRC 2003b).

The specific cut-off measurements of BMI may not be suitable for all ethnic groups, who may have equivalent levels of risk at a lower BMI (e.g. Asians) or higher BMI (e.g. Pacific Islanders or Polynesians).

Measurement of waist circumference may be a simpler valid alternative to BMI for health promotion (Han et al. 1996).

Waist circumference may also a good predictor of cancer risk. The exact relationship between increased abdominal fat and increased cancer risk is currently unclear. Significant increased risk appears to occur when the waist circumference is greater than 102 cm for men and 88 cm for women (NHMRC 2003c).

Emerging epidemiological data highlight the importance of acting on obesity as a matter of considerable importance and urgency. The increasing trends to overweight and obesity among young Australians are particularly worrying. There is mounting evidence of links between childhood eating behaviour, physical activity trends and obesity, and of their association with long-term chronic conditions, including some cancers, diabetes and cardiovascular disease (Dietz 1998; Freedman et al. 1999; WHO 2000; Dunstan et al. 2000; Ebbeling, Pawlak & Ludwig 2002).

More children and adolescents are displaying the markers of adult chronic diseases, such as cardiovascular disease, type 2 diabetes and fatty liver disease (Booth et al. 2006).

Obesity essentially results from an imbalance between declining energy expenditure due to physical inactivity and high energy in the diet. High consumption of energy dense/nutrient poor foods (excess calories from high sugar or fat foods) is the main determinant of the obesity epidemic (WHO & FAO 2003).

These trends imply a pattern of rising health costs for governments as well as for individuals and the community in which they live (Booth et al. 2001).

## The link between overweight and obesity and cancer

Obesity (BMI >30 kg/m<sup>2</sup>) is associated with increased risk of cancer at several sites; the evidence is clear for cancers of the colon, breast (post-menopause), endometrium, kidney, oesophagus and gall bladder (IARC Working Group 2002). Overweight (BMI of >25 to <30kg/m<sup>2</sup>) is similarly associated with these cancers, though the effect on risk is less (IARC Working Group 2002; WHO & FAO 2003; Boyle et al. 2003). Waist circumference greater than 102 cm for men and 88 cm for women, which is a marker of central obesity, might be a better predictor of cancer risk than BMI (MacInnis, English, Gertig et al. 2004; MacInnis, English, Hopper et al. 2004). Table 1.9 gives details of specific risk and the associations of these cancers with overweight and obesity.

**Table 1.9 Proportion of cancer attributable to overweight and obesity and associated factors**

| Type of cancer                | Proportion of incidence attributable to overweight or obesity | Aspects of the association between overweight or obesity and cancer  |
|-------------------------------|---|--|
| Colon cancer                  | 11%   | Association seems greater in men than women<br>Risk not dependent on whether person has been overweight in early adulthood or later in life<br>Some evidence that association in women may be increased by menopausal status and hormone replacement therapy (HRT) use in the obese (Slattery et al. 2003) |
| Post-menopausal breast cancer | 9%  | Increase in risk of 30% in women with a BMI $\geq 28$ kg/m <sup>2</sup> compared to those with a BMI of $< 21$ kg/m <sup>2</sup><br>Factors that increase the association between obesity and breast cancer include family history of breast cancer and never having used HRT (IARC 2002)                  |
| Endometrial cancer            | 39%   | Women with a BMI of $> 25$ kg/m <sup>2</sup> have a two- to three-fold increase in risk<br>Limited evidence suggests risk is similar in pre- and post-menopausal women   |
| Kidney cancer                 | 25%   | Individuals with a BMI of $\geq 30$ kg/m <sup>2</sup> have a two- to three-fold increase in risk compared to those below 25 kg/m <sup>2</sup><br>The effect is similar in men and women  |
| Oesophageal adenocarcinoma    | 37%   | Strong association between being overweight and adenocarcinomas of the lower oesophagus and the gastric cardia, with a two-fold increase in risk in individuals with a BMI of $> 25$ kg/m <sup>2</sup>   |
| Gall bladder cancer           | 24%   | Limited evidence available but there is a suggestion of almost a two-fold risk, especially in women  |

Source: Bergstrom et al. 2001, based on figures from Europe

There is also emerging evidence that obesity is associated with increased risk of cancers of the pancreas and liver, and multiple myeloma and non-Hodgkin lymphoma (Calle et al. 2003).

It is interesting to note that overweight and obesity are risks factors for some of the most common cancers in Australia, such as colon and breast cancer. With the rising rates of obesity in Australia, there is concern that this will translate into an increased incidence of some of the less common cancers associated with obesity.

Up to now we have known that excess body weight increases cancer risk, but there has been a dearth of evidence to suggest whether losing weight would lower cancer risk. Recent evidence indicates that weight loss in those who are overweight lowers breast cancer risk (Eliassen et al. 2006).

Most of the evidence associating body weight with cancer is derived from case-control and cohort studies. However there has been one large scale randomised controlled trial, the Women's Health Initiative, which randomised women to a very low fat diet intervention or a usual fat diet (Prentice et al. 2006). Unfortunately the Women's Health Initiative was not designed to address weight loss, with the intervention group only losing

0.4 kg more weight than the control group. While women on the low fat diet had a 9% lower incidence of breast cancer compared with the control group, this result was not statistically significant. However in sub-group analyses, breast cancer rates were reduced by 22% among women who started with the highest fat intake (>37% energy from fat) and reduced their fat the most (to 24% after one year) (Stein 2006).

Interestingly, there was suggestive evidence that the low fat diet had a more protective effect against oestrogen receptor-positive breast cancer. Despite the lack of an apparent effect on colorectal cancer, adenomas were significantly reduced among the low fat diet group (Stein 2006).

As well as a healthy body weight being associated with preventing cancer, it is also associated with preventing cancer recurrence and improving survival for people diagnosed with cancer (Brown et al. 2003). There is a reasonable level of evidence that weight management and physical activity positively impacts on quality of life, cancer recurrence and overall survival for cancer survivors (Brown et al. 2003). Randomised controlled trials, such as the Women's Intervention in Nutrition Study, have shown encouraging results of the effectiveness of nutrition and physical activity interventions in improving outcomes for cancer survivors (Chlebowski et al. 2005).

## The impact

Obesity and its underlying factors of excess energy intake and physical inactivity contribute substantially to the overall Australian 'burden of disease', that is, the overall health problems based on mortality and disability.

For the first time in Australia, overweight and obesity has overtaken tobacco as the risk factor responsible for the most significant burden of disease: 8.6% compared with 7.8% for tobacco (AIHW 2006). Overweight and obesity accounted for 8.8% of the disease burden for males and 8.3% for females. Even though the burden from tobacco is only slightly lower than the burden from obesity, it is likely that the obesity burden will continue to increase, whereas the tobacco impact is declining due to the decreases in smoking prevalence over the last 40 years.

In Australia, 3% of all cancer deaths have been attributed to a BMI of >25 kg/m<sup>2</sup> (Mathers, Vos & Stevenson 1999). More recent estimates from America suggest that overweight and obesity may account for 14% of cancer deaths in men and 20% in women (Calle et al. 2003).

US studies have suggested that the effects of obesity on quality of life and on health care costs are equivalent to 20 years of ageing (Sturm 2002), and that obesity is associated with at least as much morbidity as poverty, smoking or drinking (Sturm & Wells 2001).

Nationally, the direct costs of obesity represent a significant proportion of the health care budget and there is great potential savings from reducing the problem. International studies on the economic costs of excess body weight, including data from Australia, have shown that, conservatively, between 2% and 7% of total health care costs may be directly attributable to overweight and/or obesity (WHO 2002). In Australia in 2003 it was estimated to equate to about \$1.2 billion per year (WHO 2002). Studies of indirect costs of work workforce participation have shown increased rates of long-term sick leave and premature disability leading to loss of productivity (WHO 2002).

A recent Australian report estimated that the total financial cost of obesity in 2005 was \$3.7 billion (Access Economics 2006). The total health costs from cancer due to obesity

were \$107.3 million in 2005, with 79% of the costs related to bowel and breast cancers. Given the social and psychological consequences of obesity, intangible costs such as impaired quality of life are significant, with estimates for obesity-related cancers at \$218 million (Access Economics 2006).

Importantly, the escalating cost of health care of an obesity-related disorder, such as diabetes, has been calculated as almost doubling over time with normal progression of the disease (Bennett, Magnus & Gibson 2004). This suggests that the economic burden is not only significant, but is likely to get worse even if there is no further growth in the prevalence of obesity. Overseas studies have also found that those who are obese attain lower levels of occupational prestige and lower incomes than non-obese people (Bennett, Magnus & Gibson 2004). In addition, other studies have found that obese people as a group receive more sickness and unemployment benefits than people with a healthy body weight (Bennett, Magnus & Gibson 2004). Indirect costs, which are far greater than direct costs, include workdays lost, doctor visits, disability pensions and premature mortality, all of which increase as people go from a healthy weight to overweight or obesity (Wolf & Colditz 1996).

## The challenge

In the 10-year period from 1985 to 1995, the level of combined overweight/obesity in Australian children more than doubled, while the level of obesity tripled in all age groups and for both sexes (Cameron et al. 2003).

### Adults

There is a lack of recent national data on the levels of overweight and obesity in Australian adults, as the last National Nutrition Survey was conducted in 1995.

The Australian Diabetes, Obesity and Lifestyle Study in 1999–2000 found that the prevalence of overweight and obesity combined was almost 60% among Australian adults aged 25 years and over (Cameron et al. 2003). The rate for males was 67% and for females 52%. The prevalence of being *overweight* was 39%. For adult males it was 48% and for adult females 30%. The prevalence of *obesity* was 21% or more than double the rate observed 15 years earlier: 19% of adult males and 22% of adult females were obese.

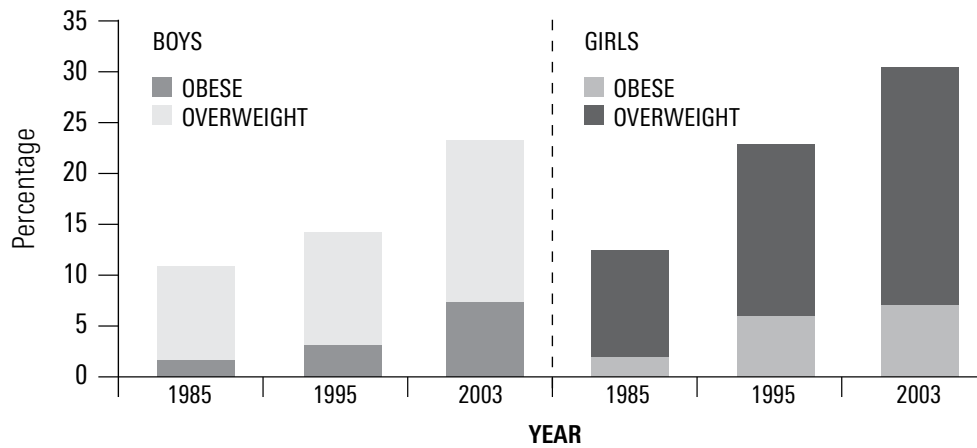
According to the five-year follow-up of the Australian Diabetes, Obesity and Lifestyle Study, more than 600 adults progress from being overweight to being obese every day (i.e. more than 200,000 annually) (Barr et al. 2006).

The 1995 National Nutrition Survey found that the proportion of overweight and/or obesity increases with age for both males and females (Marks et al. 2001). Adult men seem to increase their weight rapidly between the ages of 25 and 40 years, while the weight of women changes most markedly during the menopausal years (45 to 55). Among people aged 19 to 24 years, one in three males and one in four females are overweight or obese. Among people aged 45 to 64 years, this rises to three out of four males and almost two out of three females.

Research has confirmed that weight increases are not just a result of ageing. Younger people are gaining weight faster than previous generations and weight gain is accelerating as modern life influences weight patterns. More people are entering adulthood weighing more. Data shows that those born later in the 20th century (Generation X) will gain weight as they age at a faster rate than their parents did (Allman-Farinelli et al. 2006a & 2006b). This is believed to be a result of the increasing obesogenic environment (see description later in this chapter).

## Children

**Figure 1.5 Prevalence of overweight and obesity in children aged 7–11 years**



Sources: Magarey, Daniels & Boulton 2001; Sangiowski et al. in press

The most recent data on the levels of overweight and obesity in Australian children comes from the 2004 NSW Schools Physical Activity and Nutrition Survey (SPANS), which surveyed 5500 children from 5 to 16 years of age (Bauman et al. 2003).

In 2004, almost a quarter of children and young people from kindergarten to Year 10 (aged five to 16 years) were overweight or obese (25% of boys and 23% of girls) (Bauman et al. 2003). Children aged nine to 12 had some of the highest rates (32% in Year 6 boys and 30% in Year 4 girls). Children from lower socio-economic areas and boys from Middle Eastern backgrounds were more likely to be overweight or obese (Bauman et al. 2003).

Overweight and obesity is far more common than it used to be. The proportion of school children who are overweight or obese has increased markedly over the past 20 years. It appears that in boys, the trend towards being overweight or obese is accelerating (Bauman et al. 2003). In girls the trend is not accelerating, but is still of concern (Bauman et al. 2003).

A study looking at weight changes among Australian children over three decades found that between 1985 and 1997, the combined prevalence of overweight and obesity doubled, and that of obesity trebled among young Australians. The increase over the previous 16 years was far smaller (Booth et al. 2001). In 1985 the prevalence of overweight and obesity in boys was 11% and 12% in girls, with 1.4% of boys and 1.2% of girls being obese. Only 10 years later, depending upon age, 14% to 26% of boys and 19% to 24% of girls were overweight or obese. The prevalence of obesity was 2% to 7% in boys and 4% to 6% in girls (Baur 2001; Magarey, Daniels & Boulton 2001).

Overall there was a statistically significant increase in children's mean energy intake between 1983 and 1995. For boys, there was an increase of 1400 kJ per day; for girls, there was an increase of 900 kJ per day. These increases are much greater than those seen in adults (Cook, Rutishauser & Seelig 2001). The increase in energy intake was derived from an increase in foods high in refined sugars, such as soft drinks and confectionery (Cook, Rutishauser & Seelig 2001).

Obese children have a 25% to 50% chance of progression to adult obesity, and this may be as high as 78% in older obese adolescents (Must & Strauss 1999). This significant risk confirms the importance of preventive action.

### **Specific population groups**

The problem of overweight and obesity is so large and widespread throughout the community that it is difficult to identify any particular group that is not profoundly affected by the problem. However there are certain groups in the Australian community that bear a disproportionate burden of this condition.

Data suggest that among Aboriginal Australians and Torres Strait Islanders, overweight and obesity affect 60% of men and 58% of women (ABS 1995 National Health Survey results, cited in NHMRC 1997; NATSI Working Party 2001). The prevalence of obesity in males is 25% and in females 28%, compared with an overall population prevalence of obesity of 18%. Differences in the level of overweight and obesity between Aboriginal and non-Aboriginal men and women are most pronounced in the younger age groups. High levels of obesity are found even among the youngest age groups of Aboriginal men and women and they continue to increase throughout life, up to the sixth decade. However, the association between overweight and obesity and diseases such as diabetes, cardiovascular disease and cancers in these communities remains unclear (Guest et al. 1993; Leonard et al. 2002; Wang & Hoy 2002).

The level of overweight and obesity is higher (up to two to three times) among people of Southern European and Middle Eastern ethnic origin, when compared to those of British descent (NSW Health 2003). In contrast, those born in South East Asia had substantially lower levels of overweight, although care must be taken in interpreting these figures as the classification system may underestimate overweight in Asian people (Bennett & Magnus 1994; Bennett 1995; Mathers 1994; NSW Health 2003).

A low social status and low level of education are associated with a higher level of overweight and obesity, although the effect is more obvious in women and is not as strong as the relationship between social status and other illnesses (NSW Health 2003). Around 53% of women in the lowest socio-economic group were overweight, compared with 44% of women in the highest socio-economic group. In addition, 24% of women in the lowest socio-economic group were obese compared with only 14% of those in the highest group. There was no significant difference in the number of overweight or obese men in the highest when compared to the lowest socio-economic groups.

Some data suggest that rural and remote communities have higher levels of overweight and obesity (NSW Health 2003). The issue of access to appropriate foods and opportunities to engage in appropriate physical activity are likely to be major contributing factors to these differentials in rural and remote communities.

The clustering of factors such as low levels of education, low income and food insecurity, and their association with overweight and obesity levels, requires complex and sensitive interventions.

## Effective interventions

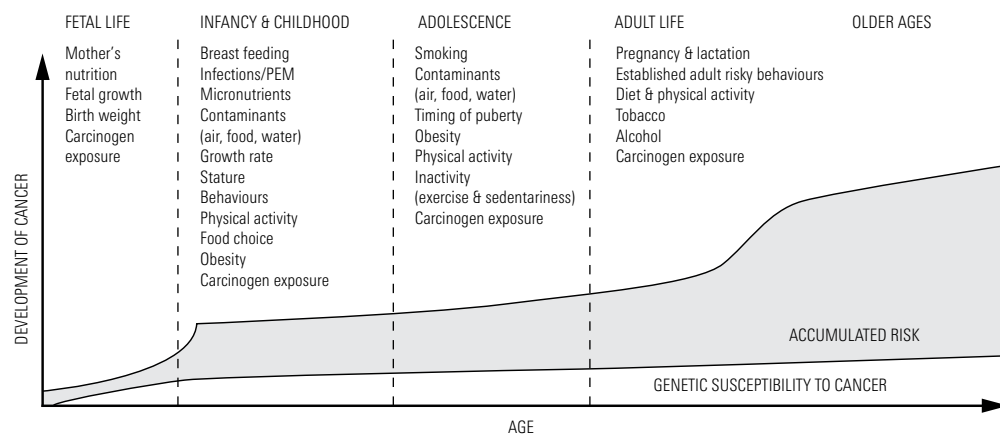
Table 1.10 lists the key physical activity and eating behaviours that need to be increased or decreased to **prevent** overweight and obesity.

Most individual studies have been conducted in a very narrow range of settings and relied heavily on education approaches to small sections of the community. Very few studies have dealt with environmental, structural or policy change or were conducted on a truly community-wide basis (Campbell et al. 2005; Reilly et al. 2002; Ebbeling, Pawlak & Ludwig 2002; WHO & FAO 2003; Gill, King & Webb 2005; Summerbell et al. 2003).

Overall the literature states that for an intervention to be effective, initiatives should be long-lasting, multi-faceted and sustainable, and should target the whole environment and be behaviourally focused (Campbell et al. 2005; Reilly et al. 2002; Ebbeling, Pawlak & Ludwig 2002; WHO & FAO 2003; Gill, King & Webb 2005; Summerbell et al. 2003).

Some researchers have proposed a life-course approach to cancer prevention (Uauy & Solomons 2005). This should start before conception, be followed through childhood and continue through all stages of the life course, as described in the figure below. Mothers should start pregnancy with a healthy weight and avoid excessive or low weight gain during pregnancy. Infant and children's growth should be regularly assessed to ensure children to do not gain weight excessively.

**Figure 1.6 The life course approach to cancer prevention**



Source: Uauy & Solomons 2005

There is general agreement that efforts should be heavily oriented towards prevention interventions in children because of the greater likelihood of success at a younger age. More effort needs to be directed at creating environmental and policy changes that will support the adoption of behaviours conducive to weight control, rather than simply relying on education approaches.

**Table 1.10 Summary of the strengths of the evidence on factors that might protect or promote against weight gain and obesity**

| Evidence     | Decreases risk  | Increases risk   |
|--------------|---|--|
| Convincing   | Regular physical activity<br>High dietary fibre intake                      | High intake of energy dense foods*<br>Sedentary lifestyles   |
| Probable     | Home and school environment that supports healthy food choices for children | Heavy marketing of energy-dense foods and fast food outlets<br>Sugar-sweetened soft drinks and juices<br>Adverse social and economic conditions in developed countries |
| Possible     | Low glycaemic index foods<br>Breastfeeding                                  | Large portion sizes<br>High proportion of food prepared outside of home<br>Rigid restraint/ periodic disinhibition of eating patterns                                  |
| Insufficient | Increased eating frequency  | Alcohol  |

\* Energy dense foods are high in fat/sugar and energy.  
Source: WHO & FAO 2003

### **Obesogenic environment**

In the past, the usual environment throughout much of Australia enforced a reasonable degree of physical activity and limited food choice. Today there is access to a wide variety of cheap, energy dense/nutrient poor foods that are marketed powerfully and the population is encouraged, directly or indirectly, to avoid expending energy through physical activity. This has led researchers to describe the environment as 'obesogenic' in that it inhibits appropriate dietary and physical activity patterns and encourages energy imbalance (Gebel et al. 2005).

The next table summarises the best options to prevent weight gain based on a framework for a broad portfolio of actions for tackling weight gain prevention (Gill, King & Webb 2005). This framework considers the level of potential health gain and level of uncertainty of risk associated with different interventions, and adopts the concept of assessing the level of 'promise' to judge the worth of interventions.

**Table 1.11 Best options to prevent weight gain**

| Target setting                          | Activities  |
|---|---|
| Best options for families               | Reduce time spent watching TV and other sedentary behaviours  |
| Best options for early childhood care   | Improve parental knowledge and skills through early childhood care facilities<br>Enhance food service policies in early childhood care facilities<br>Enhance policies in early childcare facilities to promote physical activity  |
| Best options for schools                | Establish a network of health promoting schools: <ul style="list-style-type: none"> <li>• policy on food and drinks</li> <li>• school physical environment</li> <li>• physical activity opportunities</li> <li>• health education curricula</li> <li>• programs for out of school hours care</li> </ul> |
| Best options for active neighbourhoods  | Active transport<br>Safe space for exercise facilities<br>Improve access to food options for families   |
| Best options for workplaces             | Increase options for incidental physical activity<br>Reduce passive work environments<br>Improve workplace food service options   |
| Best options for primary care           | Improve skills and knowledge of health workers  |
| Best options for industry / food supply | Work with local suppliers to reduce fat in common foods<br>Introduce taxation measures and subsidies to make healthy food options cheaper<br>Develop a simplified food labelling system indicating energy and fat content   |
| Best options for media / marketing      | Reduce exposure of children to food advertising<br>Implement social marketing strategies to support improvement of parents as healthy role models   |
| Best options for support structures     | Improve monitoring of weight and fitness status<br>Implement 'whole of community' demonstration projects  |

Source: Gill, King & Webb 2005

### Individual behaviour change

What research there is has generally focused on individual behaviour change with little attention to organisational and environmental change. There is a lack of research on the efficacy of different approaches to high risk, hard-to-reach, low income, and culturally and linguistically diverse populations that appear to experience higher rates of overweight and obesity.

Some short-term intense programs are reported as being effective in terms of weight loss, but there are doubts about sustainability (Huon, Wardle & Szatto 1999; Gortmaker et al. 1999; Sahota et al. 2001). Researchers (Ebbeling, Pawlak & Ludwig 2002) suggest that these interventions have tended to focus on highly motivated families through specialist clinics, and that, on the whole, there is little evidence that treatment interventions are

more than moderately effective. The relatively small short-term weight losses are generally reversed in the long term.

### **Schools and workplaces**

Most prevention interventions targeting children and adults have been implemented in schools and workplaces and have adopted health education and/or behaviour modification strategies. With a few exceptions, these have largely been shown to be ineffective.

School-based interventions to reduce soft drink intake among children have shown potential to be effective in preventing excess energy intake and overweight (James et al. 2004; Ebbeling et al. 2006). Other interventions that show the greatest potential for reducing obesity in children are those that reduce sedentary behaviours at home (particularly hours spent viewing TV), and promote physical activity—both in and out of school hours—as well as improved diet.

Many states in Australia have introduced policy guidelines for school canteens, to address the need for healthier choices to be available at schools.

Obesity prevention interventions that have tended to fail have been those that addressed either diet only or physical activity only, that relied primarily on education strategies without considering environmental influences, or that focused on activities and behaviours that only occur in limited settings, such as school hours (Ebbeling, Pawlak & Ludwig 2002; Reilly et al. 2002; Micucci, Thomas & Vohra 2002). One of the challenges in tackling childhood obesity is the difficulty in engaging and reaching parents. Schools can be a delivery site for interventions but must consider options to reach the whole family.

### **Policy**

Although evidence is sparse on the effectiveness of environmental change interventions, particularly policy and regulatory interventions, they have been proposed as an essential strategy for combating the obesity epidemic.

There is limited evidence about the effectiveness of economic intervention, such as taxes, price policies and incentives, in containing or reducing food consumption, particularly energy dense foods (Goodman & Anise 2006). However, modelling analyses drawing upon actual market data to track how food purchasing responds to changes in prices suggest that a combination of increased prices (in the form of taxes) for such nutrients as fat, saturated fat and sugar and subsidies on high fibre foods could reduce the consumption of the taxed nutrients as well as total energy intake.

A small body of evidence indicates that reducing the price of fruit, vegetables and other healthy snacks at the point of purchase (vending machines, cafeterias and supermarkets) increase their consumption (Anderson et al. 2001; Buscher, Martin & Crocker 2001; French, Jeffery et al. 1997; French, Story et al. 1997; French et al. 2001; Jeffery et al. 1994; Kristal et al. 1997).

Although economic measures were an important strategy in tobacco control, there is a risk that economic policy interventions involving increases in food prices would negatively impact on low socio-economic groups. Therefore they would need to be carefully assessed before being implemented. Taxation of soft drinks has been proposed as a potential strategy, particularly because of the success of taxation of alcoholic drinks in lowering alcohol consumption. Reduction in intake of soft drinks is associated with obesity reduction (James et al. 2004; Ebbeling et al. 2006). Soft drinks are a single dietary item that generally provides little nutrition apart from sugar and energy.

More effective regulation around food marketing has been proposed as an important and cost-effective strategy for addressing childhood obesity (DHS 2006). Children require

special consideration with respect to advertising, as they are less able than adults to understand fully the intent of advertising or its persuasive techniques, and are thus less able to judge the advertisements critically. The excessive level of food advertising on Australian televisions contributes to an obesogenic environment (Chapman, Nicholas & Supramaniam 2006; Neville, Thomas & Bauman 2005). Systematic literature reviews indicate that food advertising contributes to poor food choices, poor overall diet and thus increased weight gain and obesity (CFMDCY 2005; Hastings et al. 2003).

All advertising during children's programs is prohibited in Sweden (since 1991), Norway (since 1992) and Quebec Canada (since 1980) (Hawkes 2004). In all three cases, the ban is enforced by a government agency. Children in Quebec who are not exposed to television food advertising, have significantly less overweight and obesity than the Canadian average (Shields 2006). A study showed a significantly positive correlation between the number of television food advertisements and the incidence of children's overweight across countries (Lobstein & Dobb 2005). Sweden had the lowest number of food advertisements in this study and the lowest prevalence of overweight, whereas Australia and the US did not fare so well (Lobstein & Dobb 2005). The high levels of unhealthy food advertising are also a concern because of the potential to limit the effectiveness of social marketing campaigns for healthy foods and lifestyles (Hoek & Gendall 2006).

### **Broad-based public health interventions**

Prevention interventions that have adopted a population, community-wide or even neighbourhood approach, and encompass environmental, legislative and regulatory change as well as education and behaviour modification strategies, are largely absent and effectiveness cannot be assessed.

While we lack high-quality evidence on obesity interventions, there is growing knowledge about the efficacy of broad-based, comprehensive public health interventions in fields such as tobacco and skin cancer control, HIV/AIDS and road trauma reduction, increased immunisation rates, decreased coronary heart disease and increased physical activity (Hawe, Wise & Nutbeam 2001; DHA 2003; Bauman et al. 2002; Bauman et al. 2003; Gill, King & Webb 2005). The research suggests that effective public health interventions are sustained, research-based and multi-faceted, and tackle social, cultural, behavioural, organisational and environmental factors.

Evidence of population-based obesity interventions is weak (because of a modest impact) or absent (they have not been tried and evaluated). The World Health Organization states: 'population education strategies will need a solid base of policy and environment-based changes to be effective in eventually reversing these trends' (WHO & FAO 2003).

### **General practice**

Although to date there has been insufficient research to provide an evidence base for the role of the general practitioner (GP) in obesity prevention, their role at the forefront of providing primary care in Australia is recognised as having 'enormous potential to encourage patients to take greater responsibility for their health, which includes changing lifestyle' (RACGP 2006).

Several initiatives over recent years have targeted GPs as a crucial point of intervention in obesity. In 2003 the National Health and Medical Research Council published two guidelines for GPs (*Overweight and obesity in adults* and *Overweight and obesity in children and adolescents*). The guidelines focus on the clinical management of overweight and obesity to be applied in the general practice consultation.

The Royal Australian College of General Practitioners has produced three significant publications. The first, *Guidelines for preventive activities in general practice* (the 'red book') (RACGP 2005) also focuses on the role of the GP within the consultation recommending

a screening approach particularly for children and adolescents. *SNAP: A population health guide to behavioural risk factors in general practice* (RACGP 2004) provides more extensive information and recommendations regarding overweight and obesity (among other common lifestyle risk factors), focusing on a patient education and behaviour modification approach based upon the 5As (ask, assess, advise, assist, arrange). Lastly, *Putting prevention into practice: guidelines for the implementation of prevention in the general practice setting* (the 'green book') (RACGP 2006) assists in the development of systems within general practice to support prevention activities at the practice as well as the consultation level.

In further support of the GP's role in obesity prevention, the Commonwealth Department of Health and Ageing, in the 2003/04 budget, funded the Lifestyle Prescriptions program (commonly known as Lifescripts). Lifescripts is being implemented through local divisions of general practice, promoting risk factor management in general practice and primary health care services. Lifestyle prescriptions are tools for GPs to use when providing lifestyle advice to patients. Advice may be about quitting smoking, increasing physical activity, eating a healthier diet, maintaining healthy weight, reducing alcohol consumption, or a combination of these.

## The policy context

In 2003, the National Obesity Taskforce, with representation from Commonwealth and state health jurisdictions, developed a four-year national action plan for tackling obesity, known as *Healthy weight 2008: the national action agenda for children and young people and their families* (NOTF 2003). The goals are to:

- achieve healthier weight in children and young people
- increase the proportion of children and young people participating in and maintaining healthy eating and adequate physical activity
- strengthen the knowledge, skills, responsibility and resources of all people and communities to achieve optimal weight
- address social and environmental determinants of poor nutrition and physical inactivity
- focus action on giving children, young people and families the best possible chance of maintaining a healthy weight.

A ministerial taskforce to coordinate an anti-obesity campaign was announced in July 2006. It includes government, industry and community representation from the areas of health, communications, education, and sport.

*Healthy weight 2008* was preceded by *Acting on Australia's weight: a strategic plan for the prevention of overweight and obesity* (NHMRC 1997), *Eat well Australia: a strategic framework for public health nutrition*, (SIGNAL 2001), and the *National physical activity for health action plan* (NPHP 2005).

Many of the states and territories have developed frameworks and action plans similar to the Commonwealth initiative. The New South Wales and Victorian governments held child obesity summits in 2002 and Queensland held a summit in 2006 to focus attention and action on rising rates of overweight and obesity in young people.

Internationally, the World Health Organization has adopted a Global Strategy on Diet, Physical Activity and Health, which was endorsed by the May 2004 World Health Assembly (WHO 2004). The International Union Against Cancer has developed a policy to

address action on a range of cancer prevention issues including obesity, in *Evidence-based cancer prevention: strategies for NGOs* (UICC 2004).

Other relevant food policy contexts include the regulatory systems for food safety and food marketing. Food standards and regulation fall under the domain of the statutory authority, Food Standards Australia New Zealand. This has responsibility for setting standards for the production and sale of food in Australia, including food labelling issues such as nutrition and health claims.

In Australia, food marketing operates under a system of co-regulation, with the Australian Communications and Media Authority having responsibility for the Children's Television Standards, which include some regulations for limiting food advertising to children. The Advertising Standards Bureau administers the industry codes of practice developed by Free TV Australia and the Australian Association of National Advertisers, which add very little to the statutory regulations.

### **Existing recommendations**

The Cancer Council Australia supports the National Health and Medical Research Council recommendations in relation to body weight and the maintenance of a balance between energy intake (healthy eating) and energy output (physical activity). For adults, the guideline states, 'Prevent weight gain: be physically active and eat according to your energy needs' (NHMRC 2003c). For children, the guideline does not refer specifically to body weight, but reads, 'Children and adolescents need sufficient nutritious foods to grow and develop normally. Growth should be checked regularly for young children. Physical activity is important for all children and adolescents' (NHMRC 2003b).

The Cancer Council recommends that adults maintain a healthy weight within a BMI range of 18.5–25 kg/m<sup>2</sup>. To achieve and maintain a healthy weight, The Cancer Council recommends regular physical activity and eating according to energy needs. Making fruit, vegetables, cereals and other low fat foods the basis of the diet may assist with achieving and maintaining healthy body weight.

## **Aims**

Our aims are to encourage the Australian population to:

- maintain a healthy body weight throughout life by means of a balance of food intake and physical activity
- consume nutritionally adequate and varied diets based primarily on foods of plant origin such as vegetables, fruit, pulses and wholegrain cereals, as well as lean meats, fish and low fat dairy products
- adopt a physically active lifestyle
- ensure children have a nutritionally adequate and varied diet and adopt an active lifestyle appropriate to different age groups.

We also aim to advocate for more supportive environments to make healthy choices easier choices.

| What needs to be achieved  | How The Cancer Council Australia and its members (the state and territory cancer councils) will do this   |
|--|---|
| Increased awareness of the link between obesity and cancer among the general public and key health professional groups | <p>Monitor and clarify best evidence on the relationship between obesity and cancer causation</p> <p>Ensure key messages are promoted to the public and relevant health professionals in publications, presentations, programs, media statements and where opportunities arise</p> <p>Promote and/or develop complementary primary health resources, specifically for general practice, to improve evidence-based interventions by health professionals</p>   |
| Effective coordinated policy development and implementation  | <p>Develop and maintain evidence-based policy positions about the relationship between obesity and cancer to complement the Australian policy context</p> <p>Ensure effective and coordinated policy development and implementation</p>   |
| Social marketing campaigns that promote healthy weight   | <p>Advocate for nationwide social marketing campaigns that promote a healthy body weight across the life course, which are coordinated, sustainable and far reaching</p> <p>Encourage the Australian Government to commit to long-term investment in promoting a healthy weight</p> <p>Support and deliver effective community interventions at a local and state level to address healthy weight</p>   |
| A reduction in rising rates of obesity in both children and adults   | <p>Contribute to national developments on reducing obesity in Australia through collaboration and partnerships with major agencies</p> <p>Recognise the significant public health gains to be made in reducing rates of obesity in childhood</p>  |
| An increased capacity to monitor epidemiological trends  | <p>Support and conduct high-quality epidemiological research further clarifying the relationship between obesity and cancer</p>   |
| An increased capacity to monitor behavioural trends  | <p>Support and conduct high-quality behavioural research further clarifying the barriers and enabling factors for people to adopt healthy eating and physical activity behaviours</p> <p>Work towards a better understanding of the determinants of the obesogenic environment, to inform policy development</p> <p>Encourage the Australian Government to fund a comprehensive National Nutrition and Physical Activity Survey of both children and adults, which is conducted as a minimum on a regular five-year basis</p> |

| What needs to be achieved   | How The Cancer Council Australia and its members (the state and territory cancer councils) will do this   |
|---|---|
| <p>More supportive environments that assist people to make healthy food choices and provide opportunities to be physically active</p> | <p>Encourage the Australian Government to address the broader social and environmental determinants of poor nutrition and sedentary lifestyles, in particular:</p> <ul style="list-style-type: none"> <li>• call for a ban of television food advertising to children</li> <li>• develop effective regulatory systems for decreasing the level of food marketing to children (including television food advertising and other forms of food marketing)</li> <li>• improved access to healthy food choices for people who are socially or geographically disadvantaged</li> <li>• develop effective regulatory systems for communicating accurate nutrition and health information on food labels</li> <li>• improve health literacy for reading food labels</li> <li>• improve physical environments to increase opportunities for physical activity</li> </ul> <p>Continue to support and promote the Parents Jury</p> <p>Participate on the Coalition on Food Advertising to Children</p> <p>Coordinate public health responses to relevant food regulatory issues, including changes to food labelling, through participation on the Coalition on a Healthy Australian Food Supply</p> |
| <p>An increased capacity to know what works in relation to program delivery</p>   | <p>Undertake specific research and evaluation studies to:</p> <ul style="list-style-type: none"> <li>• evaluate healthy weight interventions</li> <li>• gather more evidence relating to the economic evaluation of cancer prevention</li> <li>• lead national understanding of what works in relation to cancer prevention</li> <li>• identify barriers and enabling factors for implementation of these recommendations in general practice and other health settings</li> </ul>  |

*Note: Refer also to the action plans of the physical activity and nutrition chapters when considering promotion of healthy weight.*

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